



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,489	03/31/2004	Yasushi Aono	04209 /LH	1221
1933	7590	05/17/2006	EXAMINER	
FRISHAUF, HOLTZ, GOODMAN & CHICK, PC			PRITCHETT, JOSHUA L	
220 Fifth Avenue			ART UNIT	
16TH Floor			PAPER NUMBER	
NEW YORK, NY 10001-7708			2872	

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/816,489

Applicant(s)

AONO ET AL.

Examiner

Joshua L. Pritchett

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-21 and 23-46 is/are pending in the application.
- 4a) Of the above claim(s) 4-21 and 23-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,45 and 46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

This action is in response to Amendment filed April 12, 2006. Claims 1, 2, 4, 5, 7, 9-12, 14, 15, 17-21, 23-41, 43 and 44 have been amended, claims 3 and 22 have been cancelled and claims 45 and 46 have been added as requested by the applicant.

#### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 45 and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Axelrod ("Total Internal Reflection Fluorescence at Biological Surfaces").

Axelrod discloses a total internal reflection fluorescence microscope comprising at least one objective (objective) lens which takes light from a specimen (Fig. 5); an image pick-up device (PM or video) which picks up an image of the light taken into the objective lens (Fig. 5); an observation optical path via which light taken into the objective lens is condensed onto the image pickup device (Fig. 5); a condenser lens (P) which is disposed in a position facing the objective lens via the specimen (cells) and which has a numerical aperture that makes possible total internal reflection illumination and which guides a transmitted illuminative light into the

Art Unit: 2872

specimen (Fig. 5 pages 100-101); a base including an upper portion that holds the condenser lens (Fig. 5); a laser oscillation unit which outputs the laser beam (I); an optical fiber which transmits the laser beam output from the laser oscillation unit (page 108); a reflection mirror (M) provided at a lower portion of the base to introduce the laser beam output from the optical fiber into a vicinity of the outermost portion of the condenser lens (P); a condensing lens (Lens) which converts the laser beam diverged and emitted from an emission end of the fiber into a convergent light to condense the light in the vicinity of a front focal position of the condenser lens (Fig. 5).

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Axelrod ("Total Internal Reflection Fluorescence at Biological Surfaces").

Axelrod teaches the invention as claimed including a mirror (M) but lacks reference to the mirror moving. Axelrod does teach that the condensing lens (Lens) is capable of movement perpendicular to the laser beam path which would have the same impact on the light introduced to the sample as moving the mirror in a direction substantially perpendicular to a light

Art Unit: 2872

path of transmitted illuminative light. The effect in both cases would be to change the position of the laser beam on the lens (P) of Axelrod to change the angle of internal reflection thus changing the illumination that is incident to the specimen. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the mirror of Axelrod movable in a direction substantially perpendicular to a light path of transmitted illuminative light as is suggested by Axelrod's movement of the condensing lens for the purpose of providing different excitations of the specimen to allow a more comprehensive analysis of the specimen.

Claim 2 is additionally rejected under 35 U.S.C. 103(a) as being unpatentable over Axelrod ("Total Internal Reflection Fluorescence at Biological Surfaces") in view of Wolf (US 4,972,258).

Axelrod teaches the invention as claimed including the mirror (M) but lacks reference to the mirror moving. Wolf teaches the mirror moves in a direction substantially perpendicular to a light path of transmitted illuminative light (abstract). The rotation of the mirror in Wolf would mean a portion of the rotational movement would be in a direction parallel to the optical path and would change the angle of incidence of the light contacting the specimen. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Axelrod mirror move in the direction substantially perpendicular to a light path of transmitted illuminative light as taught by Wolf for the purpose of providing different excitations of the specimen to allow a more comprehensive analysis of the specimen.

Art Unit: 2872

Claim 2 is additionally rejected under 35 U.S.C. 103(a) as being unpatentable over Axelrod ("Total Internal Reflection Fluorescence at Biological Surfaces") in view of Baer (US 5,866,911).

Axelrod teaches the invention as claimed including the mirror (M) but lacks reference to the mirror moving. Baer teaches the mirror moves in a direction substantially perpendicular to a light path of transmitted illuminative light (col. 11 lines 30-45). The scanning of the mirrors in Baer would mean a portion of the movement would be in a direction substantially perpendicular to a light path of transmitted illuminative light and would change the angle of incidence of the light contacting the specimen. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Axelrod mirror move in the direction substantially perpendicular to a light path of transmitted illuminative light as taught by Baer for the purpose of providing different excitations of the specimen to allow a more comprehensive analysis of the specimen.

### *Response to Arguments*

Applicant's arguments filed April 12, 2006 have been fully considered but they are not persuasive.

Applicant argues Axelrod does not teach a base having an upper portion holding the condenser lens and a lower portion holding the mirror. The term base is defined as the bottom of something considered as its support. As shown in Fig. 5 the element holding the condenser lens (P) is attached to the base and can therefore be considered an upper portion of the base. Further

Art Unit: 2872

there is no relative relation between upper and lower defined in the claim language. Still further, the upright portion of the base could be considered as holding the condenser lens, in a manner similar to a wall holding a picture, in the broadest reasonable interpretation of the claim language.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L. Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

Art Unit: 2872

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLP *JP*

  
**DREW A. DUNN**  
**SUPERVISORY PATENT EXAMINER**